SEL0414 - Sistemas Digitais
Resolução Lista 7 - Codificadores e Decodificadores

01

$'COST = \$72' \Rightarrow (434F53543D243732)_h$

02

$(01010011010101000100111101010000)_b = (53544F50)_h =' STOP'$

03

a.

Codificador

b.

Codificador

c.

Decodificador

d.

Decodificador

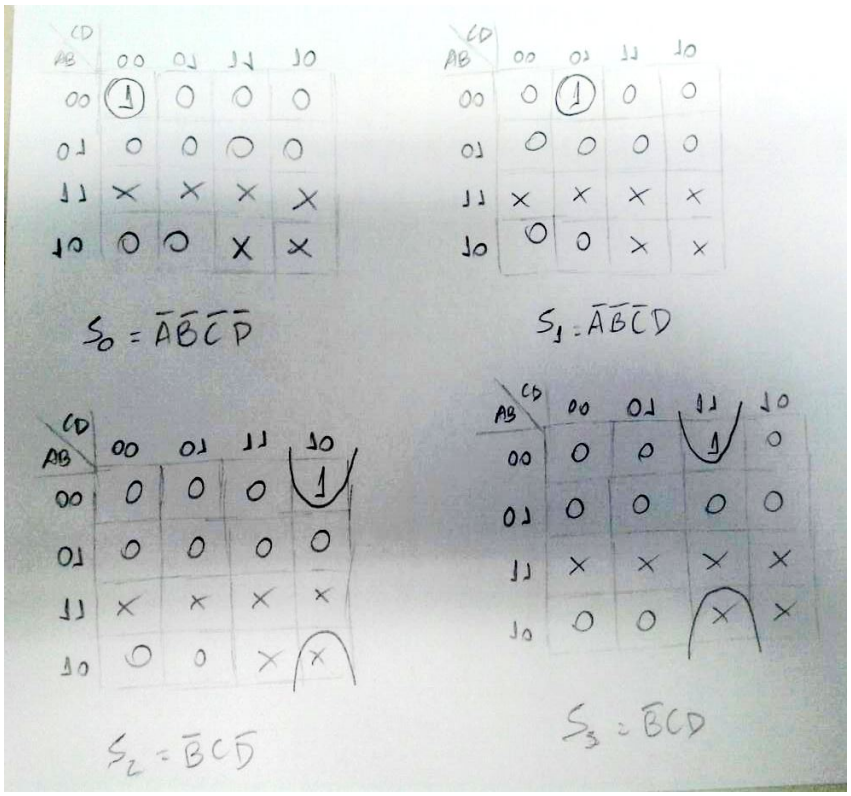
04

A	B	C	D	SAÍDA ATIVA
0	0	0	0	S_0
0	0	0	1	S_1
0	0	1	0	S_2
0	0	1	1	S_3

A	B	C	D	SAÍDA ATIVA
0	1	0	0	S_4
0	1	0	1	S_5
0	1	1	0	S_6
0	1	1	1	S_7

A	B	C	D	SAÍDA ATIVA
1	0	0	0	S_8
1	0	0	1	S_9
1	0	1	0	X
1	0	1	1	X

A	B	C	D	SAÍDA ATIVA
1	1	0	0	X
1	1	0	1	X
1	1	1	0	X
1	1	1	1	X



AB \ CD	00	01	11	10
00	0	0	0	0
01	1	0	0	0
11	X	X	X	X
10	0	0	X	X

$S_4 = B\bar{C}\bar{D}$

AB \ CD	00	01	11	10
00	0	0	0	0
01	0	1	0	0
11	X	X	X	X
10	0	0	X	X

$S_5 = B\bar{C}D$

AB \ CD	00	01	11	10
00	0	0	0	0
01	0	0	0	1
11	X	X	X	X
10	0	0	X	X

$S_6 = BC\bar{D}$

AB \ CD	00	01	11	10
00	0	0	0	0
01	0	0	1	0
11	X	X	X	X
10	0	0	X	X

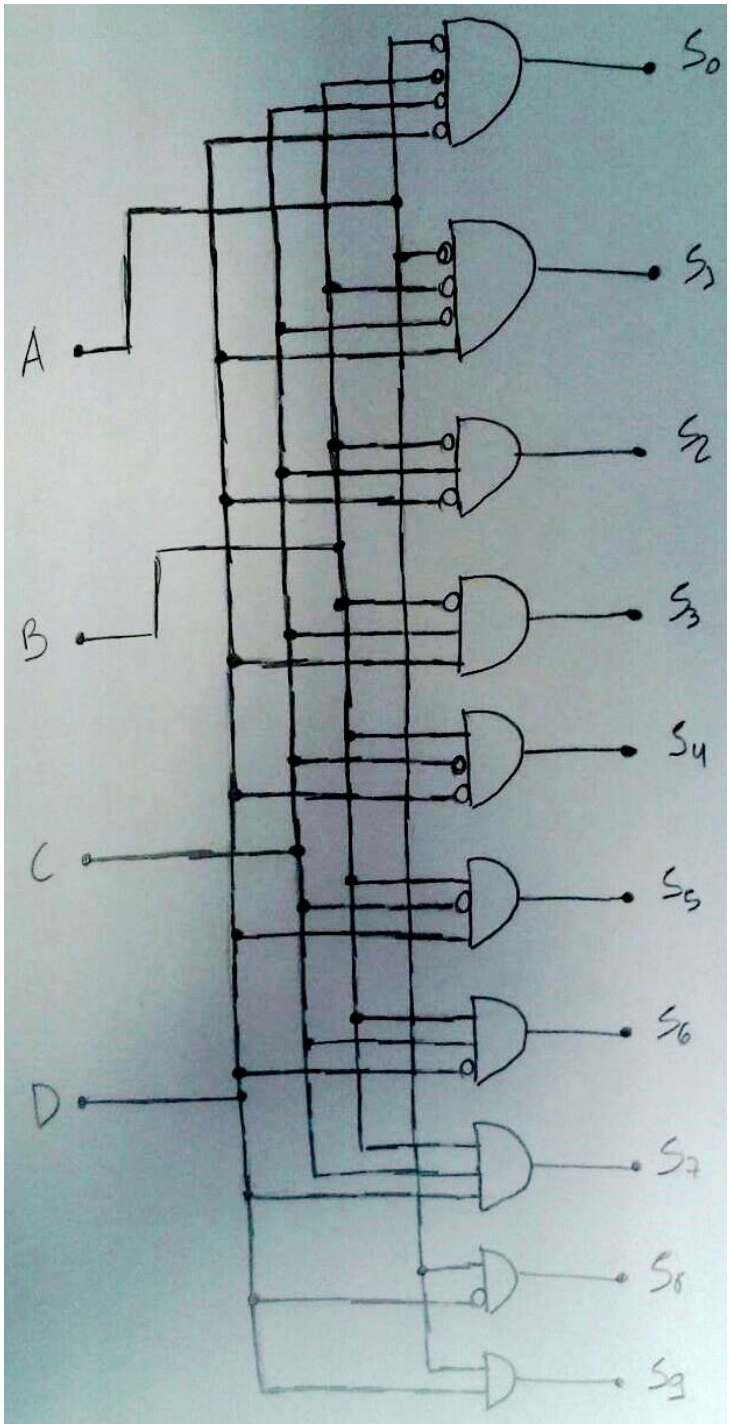
$S_7 = BCD$

AB \ CD	00	01	11	10
00	0	0	0	0
01	0	0	0	0
11	X	X	X	X
10	1	0	X	X

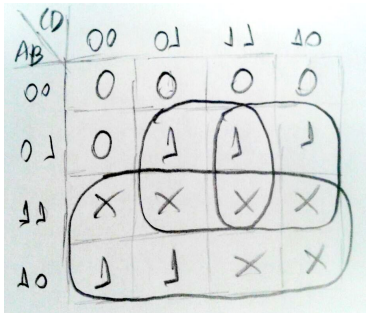
$S_8 = A\bar{D}$

AB \ CD	00	01	11	10
00	0	0	0	0
01	0	0	0	0
11	X	X	X	X
10	0	1	X	X

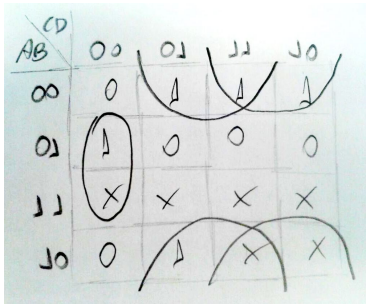
$S_9 = AD$


A
B
C
D
S0
S1
S2
S3
S4
S5
S6
S7
S8
S9

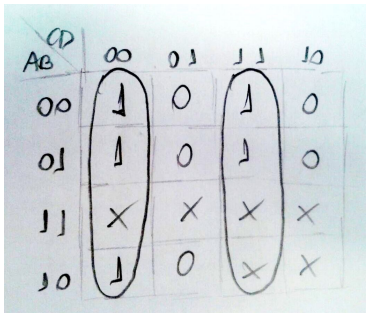
05



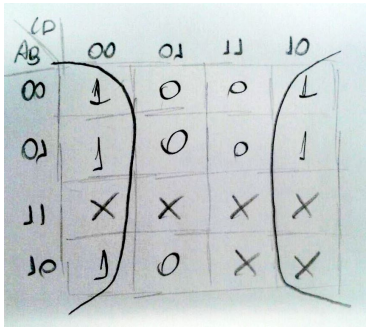
$S_3 = A + BD + BC$



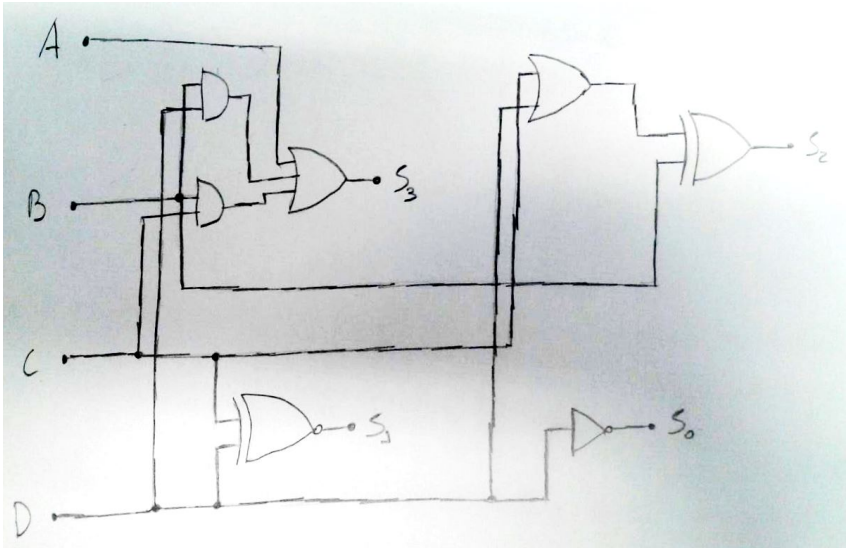
$S_2 = B\overline{C}\,\overline{D} + \overline{B}D + \overline{B}C = B\overline{C}\,\overline{D} + \overline{B}(C + D) = B\overline{C + D} + \overline{B}(C + D) = B \oplus (C + D)$



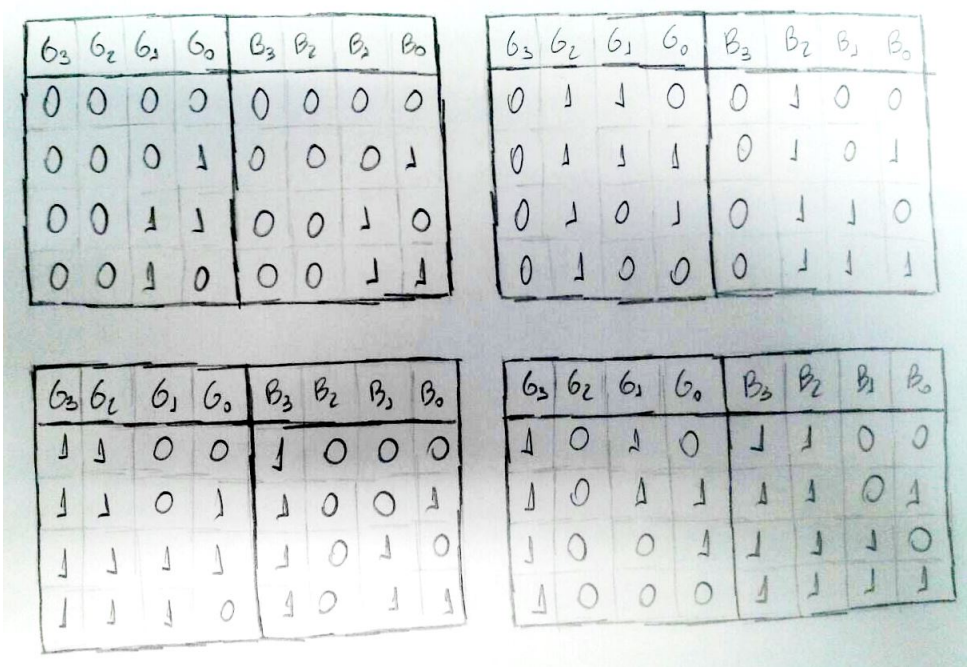
$S_1 = \overline{C}\,\overline{D} + CD = \overline{C \oplus D}$

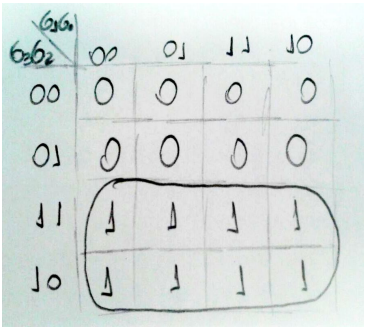


$S_0 = \overline{D}$

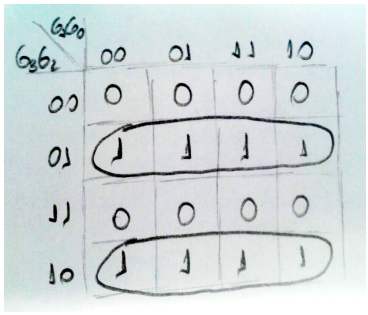


06

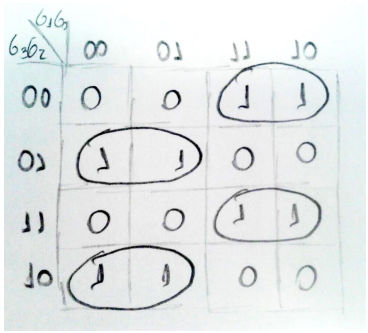




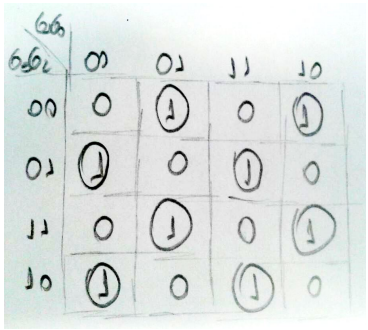
$B_3 = G_3$



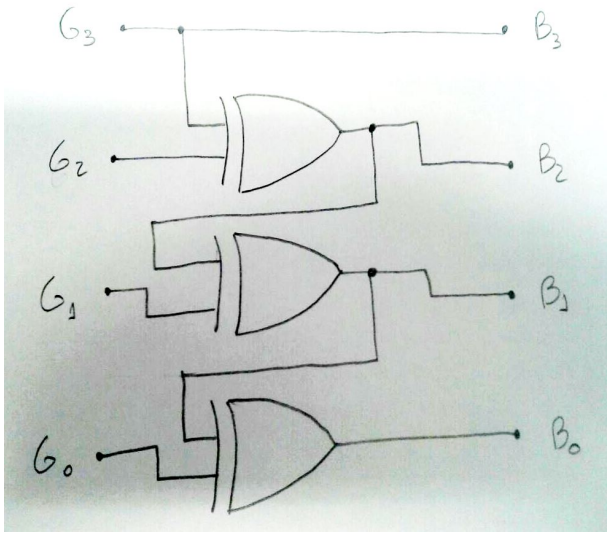
$B_2 = \overline{G_3}G_2 + G_3\overline{G_2} = G_3 \oplus G_2$



$B_1 = \overline{G_3}\,\overline{G_2}G_1 + \overline{G_3}G_2\overline{G_1} + G_3G_2G_1 + G_3\overline{G_2}\,\overline{G_1} = \overline{G_3}(G_2 \oplus G_1) + G_3(\overline{G_2 \oplus G_1}) = G_3 \oplus G_2 \oplus G_1$



$B_0 = \overline{G_3}\,\overline{G_2}\,\overline{G_1}G_0 + \overline{G_3}\,\overline{G_2}G_1\overline{G_0} + \overline{G_3}G_2\overline{G_1}\,\overline{G_0} + \overline{G_3}G_2G_1G_0 + G_3G_2\overline{G_1}G_0 + G_3G_2G_1\overline{G_0} + G_3\overline{G_2}\,\overline{G_1}\,\overline{G_0} + G_3\overline{G_2}G_1G_0 = \overline{G_3}\,\overline{G_2}(G_1 \oplus G_0) + \overline{G_3}G_2(\overline{G_1 \oplus G_0}) + G_3G_2(G_1 \oplus G_0) + G_3\overline{G_2}(\overline{G_1 \oplus G_0}) = (G_1 \oplus G_0)(\overline{G_3 \oplus G_2}) + (\overline{G_1 \oplus G_0})(G_3 \oplus G_2) = G_3 \oplus G_2 \oplus G_1 \oplus G_0$



07

A solução dessa questão se encontra a partir do slide 23 da Aula 7.